

### AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

#### LISTING OF CLAIMS

1-69. (Canceled)

70. (Currently Amended) A bio-disc for detecting the binding of target-DNA to capture-DNA, comprising:

a substantially circular substrate adapted to transmit an interrogation beam from an optical drive;

a reflective layer associated with said substrate, wherein said reflective layer is adapted to reflect said interrogation beam;

a plurality of target zones disposed in said reflective layer, wherein said target zones permit said interrogation beam to pass through said reflective layer; and

an active layer adjacent to said reflective layer and said target zones, wherein said active layer comprises immobilized capture-DNA positioned to be contacted by said interrogation beam as it passes through said target zones.

71. (Previously Presented) The bio-disc of Claim 70, further comprising a fluidic circuit associated with said active layer.

72. (Previously Presented) The bio-disc of Claim 71, wherein said fluidic circuit is formed from a membrane associated with said active layer.

73. (Previously Presented) The bio-disc of Claim 72, wherein said membrane is an adhesive membrane.

74. (Previously Presented) The bio-disc of Claim 71, wherein said fluidic circuit comprises a flow channel and a return channel.

75. (Previously Presented) The bio-disc of Claim 74, wherein said flow channel and said return channel form a "U" shape.

76. (Previously Presented) The bio-disc of Claim 71, further comprising a cap portion associated with said active layer, wherein said cap portion provides an inlet port to said fluidic circuit.

77. (Previously Presented) The bio-disc of Claim 76, further comprising a second reflective layer disposed between said active layer and said cap portion.

78. (Currently Amended) A bio-disc for detecting the binding of target-DNA to capture-DNA, comprising:

a substantially circular substrate configured to be read by an optical drive; and

a plurality of flow channels associated with said substrate, wherein said flow channels are divided by a break-away retaining wall configured to break when said bio-disc rotates at a predetermined speed in said optical drive, further comprising DNA ~~immobilized on~~ chemically bound to an active layer associated with said flow channels.

79. (Canceled)

80. (Previously Presented) The bio-disc of Claim 78, wherein said flow channels are formed from a membrane.

81. (Previously Presented) The bio-disc of Claim 78, further comprising a cap associated with said active layer, wherein said cap comprises inlet ports configured to receive fluid into said flow channels.

82. (Currently Amended) The bio-disc of Claim 78, further comprising:

a reflective layer associated with said substrate, wherein said reflective layer is adapted to reflect said interrogation beam from said optical ~~disk~~ disc;

a plurality of target zones disposed in said reflective layer, wherein said target zones permit said interrogation beam to pass through said reflective layer to said active layer.

83. (New) The bio-disc of Claim 78, wherein said DNA is covalently bound to said active layer.

84. (New) A bio-disc for detecting the binding of target-DNA to capture-DNA, comprising:

a substantially circular substrate configured to be read by an optical drive;

a plurality of flow channels associated with said substrate, wherein said flow channels are divided by a break-away retaining wall configured to break when said bio-disc rotates at a predetermined speed in said optical drive, further comprising DNA immobilized on an active layer associated with said flow channels;

**Appl. No.** : **10/035,836**  
**Filed** : **December 21, 2001**

a reflective layer associated with said substrate, wherein said reflective layer is adapted to reflect said interrogation beam from said optical disc; and

a plurality of target zones disposed in said reflective layer, wherein said target zones permit said interrogation beam to pass through said reflective layer to said active layer.

85. (New) The bio-disc of Claim 84, wherein said flow channels are formed from a membrane.

86. (New) The bio-disc of Claim 84, further comprising a cap associated with said active layer, wherein said cap comprises inlet ports configured to receive fluid into said flow channels.